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The equipment provided funds for the purchase of a Symbolics 3600 Lisp Machine and associated imaging equipment. The imaging equipment consisted of a serpentine memory and frame buffer from Robotic Systems, Incorporated. The funds awarded for a color monitor, $1,450, was originally to be supplemented by funds from AFOSR contract F49620-83-C-0093. Since the monitor could not be purchased by combining the two sources of funds, we purchased a Tektronix 690SR color monitor from the AFOSR contract and a NEC printer from this grant. The equipment has been used to investigate the visual mechanisms underlying the detection of discontinuities and structure in visual texture. Psychophysical experiments have investigated the salience of bar orientation and the effects of grouping in texture segmentation. We are examining the role of clongated receptive fluid mechanisms in computing local measures of texture and their possible role in texture segmentation. A more detailed exposition of our research can be found in the annual report for the AFOSR contract. — RRH 47

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Equipment for Computational Studies of Vision

The equipment grant provided funds for the purchase of a Symbolics 3600 Lisp Machine and associated imaging equipment. The imaging equipment consisted of a serpentine memory and frame buffer from Robotic Systems, Incorporated. The funds awarded for a color monitor, $1,450, was originally to be supplemented by funds from AFOSR contract F49620-83-C-0093. Since the monitor could not be purchased by combining the two sources of funds, we purchased a Tektronix 690SR color monitor from the AFOSR contract and a NEC printer from this grant.

The Lisp Machine, located in the Department of Psychology, was connected via Ethernet to the Department of Computer and Information Science VAXes and Lisp Machines, thereby providing access to file structures at the two sites. The Robotic Systems frame buffer is operational and has served as a central tool for color and grey-level stimulus presentation in our laboratory. The serpentine memory is currently being integrated into the Lisp Machine along with the associated digital convolver (funded by the AFOSR contract).

Also, a grant application to Tektronix for a video hard copy device was approved; a 4634 valued at $7900 was donated for our research project.

The equipment has been used to investigate the visual mechanisms underlying the detection of discontinuities and structure in visual texture. Psychophysical experiments have investigated the salience of bar orientation and the effects of grouping in texture segmentation. We are examining the role of elongated receptive field mechanisms in computing local measures of texture and their possible role in texture segmentation. A more detailed exposition of our research can be found in the annual report for the AFOSR contract.